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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,166	09/08/2003	Wolfgang Albrecht	NI 156	1545

7590 05/08/2006

KLAUS J. BACH & ASSOCIATES  
PATENTS AND TRADEMARKS  
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EXAMINER
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FORTUNA, ANA M

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/662,166

Applicant(s)

ALBRECHT ET AL.

Examiner

Ana M. Fortuna

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/17/06 has been entered.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

2. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In the specification, example 2, washing the membrane to remove modifier substances "not covalently bonded" to the membrane e.g. polyimide, is disclosed. Explanation on how are the covalent bond formed between the polyimide substrate and the aqueous diamine solution or modifier solution are not provided.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. The rejection of claims 1-5 in paragraph 3 of paper of 7/8/05 is maintained.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

6. Claims 1-5, 7, 11-15, 17, are rejected under 35 U.S.C. 102(b) as being anticipated by Drumheller (US 5,914,182). Drumheller discloses support members or membranes made from polyimide, between other listed materials (abstract, column 12, lines 3-14), modified by a crosslinked modifier solution including polyethyleneimine in a suitable solvent including alcohol and water, etc (see column 12, lines 37-68 and column 13, lines 3). Regarding claim 1, the membrane including the support, which is pretreated with a surfactant adsorbed (or optionally crosslinked to itself, and further forming a "covalent crosslinked" layer of the amine solution, e.g. polyethyleneimine (column 12, lines 55, column 11, last paragraph, through column 12, lines 1-2).

Therefore, the membrane including two layers including the polyimide body and the modifier layer formed from the primary or secondary amine compound and crosslinked by the reaction with the surfactant adsorbed on the polyimide support, is disclosed in Drumheller, since claim 1 does not exclude pretreatment of the polyimide body or membrane.

The covalent attachment of the surface modified e.g. amine solution, and process of treating the support or substrate (polyimide) with the modifier solution is also disclosed in Drumheller (see column 15, lines 20-51, column 16, lines 28-52), coating by

immersing, which covers both sides of the membrane, washing with water, heating, and drying steps are also disclosed (see examples 1-13, illustrated for ePTFE support, however, polyimide can be used, claims 1-6).

The percentages of the hydrophilic polymer, e.g. amino compound in the solvent, as claimed in claims 4, 13-14 is disclosed to be about 0.001 to 99.9 %, and preferable about 0.25 to 5 %. (see column 15, second paragraph).

The primary or secondary amino compound of claims 5 and 15 is discussed above, e.g. polyethyleneimine.

Regarding claims 2-3 and 11, the treatment time, washing and temperature conditions are disclosed in '182 (column 17, last paragraph bridging column 18, and column 18, lines 50-53).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8.. Claims 6, 8, 9, 10, 16, 18, 19, 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Drumheller (US 5,914,182). Drumheller, discussed above does not disclosed or limit the membrane support to asymmetric or supported structure, and teaches that porous support can be used for the hydrophilic treated membrane (see column 16, lines 40-54). Selecting asymmetric support is not critical to the invention. One skilled in the art at the time the invention was made would have been motivated to

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use any commercially available polyimide membrane for the modification, base on the only limitation of being porous an non blocked by the treatment, as suggested in the patent above. Coating the support from the non-active surface it would have been obvious to the skilled artisan and suggested by patent '182, e.g. immersing, which cover both membrane surfaces (see column 20, example 6).

Regarding claim 9, the selected polyimide membrane is a dried polyimide, e.g. a pre-prepared polyimide.

Regarding claim 10, wetting the membrane support with a wetting agent is also suggested in Drumheller (column 13, second paragraph, example 4, column 19, line 20).

Regarding claims 10 and 20, wetting the membrane with a well wetting aqueous solution id suggested in Drumheller (column 13, second paragraph, column 20, example 6, column 19, example 4, column 20, example 7).

### ***Conclusion***

9.. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Patents 5,700,559, 6,177,013, 5,840,190, and 5,919,523 teach the membrane surface modification or body modification by cationic groups provided by amino groups solution, e.g. polyethyleneimine, and the ionic and covalent bonding and non-bonding to the surface an the processes of making.

### ***Response to Arguments***

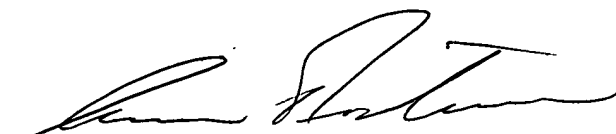
10. Applicant's arguments filed 4/17/06 have been fully considered but they are not persuasive. Rejection over Friensen et al has been withdrawn based on the lack of

evidence for covalent bond formation. Rejection over Linder et al is maintained, because Linder teaches covalent bond as preferred crosslink, and the combination of salts with the amine compound to generate the covalent bond is also disclosed (column 5, lines 521, column 8, lines 34-49, column 9, lines 43-68 and column 10, lines 1-6). The rejection is maintained, because two layers or double treatment of the substrate is not required to produce the covalent bond in Linder ('282). Additional rejections are necessitated by the amendment.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M. Fortuna whose telephone number is (571) 272-1141. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ana M Fortuna

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Primary Examiner  
Art Unit 1723

AF  
April 26, 2006